

CLAIMS

1. Protective equipment for the head, comprising:

5 - a breathing mask (2, 202) that can be connected to a breathing-gas source and adapted to be applied, in a position of use, over the bottom part of a user's face, around his nose and his mouth, and for supplying him with breathing gas,

10 - a shield (6, 206) for protecting the eyes adapted to be applied over the top part of the user's face, around his eyes, and

15 - first (32, 229) and second (56, 250) lock elements, respectively located on the mask (2, 202) and on the shield (6, 206) and adapted to cooperate with each other in order to secure the shield (6, 206) to the mask (2, 202) when the mask (2, 202) is in its position of use on the user's face, characterized in that the first (32, 229) and second (56, 250) lock elements are adapted to engage and to interlock with
20 each other by a movement of bringing the shield (6, 206) closer to the mask (2, 202), this movement having a downward component, with reference to the top and bottom of the face.

25 2. The protective equipment as claimed in claim 1, characterized in that the second element (56) comprises a nipple extending, starting from the shield (6), in a first oblique direction (Z-) comprising a downwardly directed component, with reference to the top and bottom of the face.

30 3. The protective equipment as claimed in claim 2, characterized in that the mask (2) comprises a substantially conical cavity narrowing toward the first element (32) in order to guide the second element (56) toward the first element (32), in the movement of
35 bringing the shield (6) toward the mask (2).

4. The protective equipment as claimed in one of claims 2 and 3, characterized in that the nipple (56) is adapted to move longitudinally, substantially in the

first direction (Z-), between a locked position and an unlocked position, within a grasping unit (50) comprising grasping surfaces (82) for a user's fingers.

5 5. The protective equipment as claimed in claim 4, provided with a push-button (84) placed substantially between the grasping surfaces (82) and manually operable in order to move the nipple (56) from its locked position to its unlocked position.

10 6. The protective equipment as claimed in claim 5, in which the push-button (84) has, in a direction substantially perpendicular to the first direction (Z-), an ergonomic surface for pressing the push-button (84), this surface having a dimension greater than 15 mm.

15 7. The equipment as claimed in one of claims 2 to 6, in which the mask has guidance surfaces (22), diverging from a ridge (20) situated substantially in coincidence with the bridge of the user's nose, and the nipple (52) is flanked by two wings (52) that are
20 substantially symmetrical with respect to the median plane (P) of symmetry of the face when the equipment is being worn by the user, these wings (52) extending between a high end (58) close to the nipple (56) and a low end (60) distant from the nipple (56) and becoming
25 more distant from this plane (P) toward their low end (60), in order to allow the guidance, by the guidance surfaces (22), of the positioning of the shield (6) on the mask (2).

30 8. The equipment as claimed in one of the preceding claims, characterized in that it comprises a locking indicator adapted to block, in an active position, any movement of the first element with respect to the second element and which can be in the active position only when the mask (2) and the shield
35 (6) are secured to each other by a mutual interlocking of complementary shapes of the first (32) and second (56) lock elements.

9. The protective equipment as claimed in claim 1, in which the first (229) and second (250) lock elements

are adapted to allow a movement of the shield (206) with respect to the mask (202), and to favor the application of the shield (206) over the user's face.

5 10. The protective equipment as claimed in claim 9, in which the first (229) and second (250) lock elements are mobile with respect to each other, about a horizontal axis (C), by means of two links (256, 258).

10 11. The protective equipment as claimed in one of the preceding claims, in which the mask (202) comprises a locking ramp (224) adapted to guide the shield (206) toward a locked position of the shield (206) on the mask (202), while the shield (206) is moving toward the mask (202).

15 12. The protective equipment as claimed in claim 11, characterized in that the locking ramp (224) is oriented with a component (Z-) that is downward and toward the interior of the mask (202).

20 13. The protective equipment as claimed in one of claims 9 to 12, characterized in that it comprises spring means (260) adapted to bring the shield (206) toward the user's face, when the shield (206) is secured to the mask (202) and when the mask (202) is worn by the user.

25 14. The protective equipment as claimed in one of claims 9 to 13, comprising a harness (204) fitted with straps (205) adapted to maintain the mask (202) in the position of use on the user's head and in which the shield (206) comprises two guidance members (239) adapted for each one respectively to become inserted under a strap (205) of the harness (204) when putting
30 the shield (206) into position on the mask (202).

35 15. The protective equipment as claimed in claim 14, in which the guidance members (239) are adapted to cause the straps (205), under which they are inserted while the shield is being put into position on the mask (202), to rise over the sides of the shield (206).

16. The protective equipment as claimed in one of claims 14 and 15, in which the straps (205) of the harness (204) are provided with a collar (207), at the

level of the places of insertion of the guidance members (239) under these straps (205).

17. A breathing mask for the protective equipment as claimed in one of the preceding claims, comprising a guidance ramp (224).

18. The mask as claimed in claim 17, comprising straps (205) provided with guidance collars (207) at the level of the places of insertion of the guidance members (239) of a shield (206) under these straps (205).

19. A protective shield for the protective equipment as claimed in one of claims 7 to 16, comprising guidance members (239) adapted for each one respectively to be inserted under a strap (205) of the harness (204) when putting the shield (206) into position on the mask (202).

20. A shield support assembly, this assembly comprising:

- a support (100),
- a protective shield (6, 206), and
- first (32, 229) and second (56, 250) lock elements, situated on the support (100) and on the shield (6, 206) respectively and adapted to cooperate with each other in order to secure the shield (6, 206) to the support (100),

characterized in that the first (32, 229) and second (56, 250) lock elements are adapted to engage and to interlock with each other by a movement of bringing the shield (6, 206) closer to the support (100), this movement having a downward component in order to fix the shield (6, 206) to the support (100) when the shield (6, 206) is not secured to a mask (202).

21. The support as claimed in claim 20, characterized in that it has means (108) of attaching the mask (2, 202) that are independent of the means (102) of attaching the shield and adapted to make it possible to detach the mask (2, 202) from the support (100) without necessarily detaching the shield (6, 206) from it.